

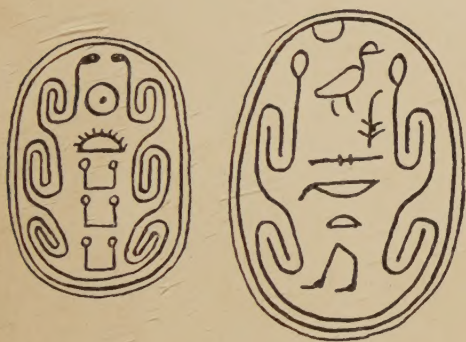
ANCIENT EGYPT

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PART II.

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THE AGE OF EGYPT.

THE question of the age of Egyptian civilisation has a decisive voice in settling the whole scale of western history. It is therefore one of the subjects which most urgently need adjustment. Unfortunately the usual course is to defer to some opinion without trying to understand the matter, and very few students have even a hazy idea of the elements of the subject, or know what monuments define it. It has even become a mark of orthodoxy to ignore inconvenient facts, which must not be allowed to trouble polite studies. Lately some fresh information has come to light, so it will be well to give a short outline of the materials for study, and of the various proposals which have been made for co-ordination.

The reckoning of time was as diverse among the Egyptians as among ourselves. We have three modes of reckoning, and sometimes a fourth. There is the day defined by a single rotation of the earth, or the sidereal day used by astronomers, of 366·256 in the year. As one rotation is neutralized by the revolution round the sun, there are 365·256 solar days in the year, the count of "Old Style," called by astronomers the Julian day and Julian year. But as the earth's pole wobbles round in the sky once in twenty-five thousand years, —the so-called processional motion—the year of the seasons, or Gregorian, or legal year of "New Style," contains 365·242 solar days. Beside these years the lunar year, which was probably the first reckoning of man, is of 354·367 days in twelve moons, but is now unnoticed owing to electric light generally superseding moonlight. It remains in use in Islam, and entails the great fast of Ramadan shifting through all the seasons.

The Egyptian had four several years with separate festivals, as named on the tomb of Khnumhetep (*Beni Hasan* I, pls. xxiv, xxv). These were the "head of the year," "the opening of the year" otherwise "the coming forth of Sothis," "the great year," and "the little year." The allotment of these names is not absolutely certain, but we can see that there must have been (1) the normal year of 12 months of 30 days and 5 additional, counting probably from mid-winter: (2) the Sirius or Sothis year, from near mid-summer: (3) the long year or seasonal year of 365·25 days: and (4) the short lunar year of 354·367 days. The year of 365 days, by the lack of leap year, was carried back through the months in 1460 years; the seasonal year avoided this by adding the quarter of a day, and the seasons were named from natural conditions, Dec. to April, "growth months," April to August "house months," and August to December "inundation months." The months of the lunar year must have moved round the seasons in 32 years like the Arab months. It is obvious that dates will be very different according to the various calendars, and it is essential to discriminate which calendar will agree with the actual record of facts.

The principal materials that define the chronology are (A) astronomical, such as the changes due to the omitted leap year, or to the seasonal change of Sirius, or to lunar reckoning: (B) Monuments stating lengths of reigns or other intervals: (C) Seasonal dates of events recorded in terms of a changing year: (D) Material evidence of objects: (E) History transmitted by authors and copyists.

At first Egyptologists, from Champollion onward, based their history upon the transmission by copyists of the history of Manetho; that writer had great opportunities of collecting material, and was of good education and repute. The vague whole-length statements of Herodotos showed that Manetho's general scale was accepted in the vth century B.C., and the fragments of the chronological papyrus of Turin down to the xivth dynasty showed that such was also the history of that age in 1500 B.C. Thus about 5600 B.C. was accepted for the beginning of the 1st dynasty.

Some eighty years ago, in the fervour of critical discoveries, an idea arose of disbelieving every statement of which no evidence had yet been found. Homer and the kings of Rome fared badly and, for Egypt, Bunsen cut down the 1st dynasty to 3600 B.C., Lepsius and Lieblein to 3900. An essential change in the position came in 1899 when a dating of the rise of Sirius on the 17th of Phamenoth (the 197th day of the year, or 227th if starting from Mesore) was found recorded in the 7th year of Senusert III of the xiith dynasty. This was assumed to be on the basis of a year of 365 days, and therefore would show the xiith dynasty to have been from 3459 to 3246, or else from 1999 to 1756 B.C., thus leaving only two centuries for the xiiith to xviith dynasties. The earlier dating is too distant to agree with remains in other lands, the later dating is quite incompatible with Egyptian records. The latter, however, has been accepted by the Berlin school, and it is curious how the monuments between the xiith and xviith dynasties are ignored in order to favour this view; it is even thought by some to be improper to refer to them. The only way to avoid the length of the history as stated by Manetho, and summed up at the end of the three sections of his work, is to suppose that some of his dynasties were really overlapping, and thus double-reckoned. Various schemes of such shortening have been proposed.

The historic material which has to be considered is as follows:—

Dyn.	Manetho by Africanus			Turin papyrus		Manetho by Josephus		
	kings	years	av.	kings	av.			
xiii	60	453	7'5	53	8'2			
xiv	76	184	2'4	87				
xv	6	284	47'3			6	260	43'5
xvi	32	518	16'2					
xvii	43	151	3'5					

Now we must turn to see how various writers have treated the situation. As these records do not agree with the conclusions of Berlin, Meyer states in 1904 that "these numbers are historically absolutely worthless." Further in 1909 he quotes the Egyptian statements, but concludes "That is to us an absurd exaggeration, because as a matter of fact we know from the Sothis datum that the interval does not amount to more than about 210 years."

Accordingly he proceeds by entirely ignoring the Egyptian statements in his conclusions, and not making any proposal to fit the monumental facts into his assumed framework of 210 years; he only states that the Hyksos were in the Nile valley for a century from 1680 to 1580 B.C., places king Ay at 1710, and so brings in the Hyksos at the middle of the xiiith dynasty. This treatment would ignore the close link of style between the xith dynasty and the Hyksos, as well as all the historical statements which are left to us by the Egyptians.

Raymond Weill in *La fin du Moyen Empire Égyptien* (1918) has described many monuments of the period, in a work of 971 pp. He declares the accounts of the Hyksos to be literary exercises on the "theme of disorder." By throwing over the dynastic list of Manetho, the general statements of the total history, the list of Hyksos kings in Josephus and the recorded reigns in the Turin papyrus, he breaks up the recorded names of kings into many small groups which he rearranges on the following scheme (p. 819):

11 kings	20 years	
xiii th dynasty	90	
xiii th and xiv th dynasties	85	{ xv
xvii th dynasty	15	{ xvi
	<u>210</u> years	

Two of his guiding theories are (A) that kings having the same type of name formed compact groups, and (B) that a type of scarab which he reads *Anra* is a definite group. Regarding (A) it is enough to see that the xviiith dynasty has many types of kings' names recurring in it without any order, as Ra-neb-, Ra-oa-, Ra-zeser-, Ra-men-, Ra-kheper-; if these were rearranged according to the groups of name-type, history would be destroyed. Regarding (B), the reading of the epithet should be *rda-n-ra*, = Heliodoros, and as Weill states that it is found from the xiiith to the xviiith dynasties, it cannot be of any precise value.

A more rational view was taken by Arthur Weigall in *A history of the Pharaohs* II (1927). He begins by claiming that during the interval there was a change by New Year beginning on 1 Mesore instead of 1 Thoth, thus gaining 120 years for the duration of the xiiith–xviith dynasties, which he places at 1898 to 1576 B.C., a length of 322 years. The omission of the five epagomenal days, in a note on a papyrus of the time of Khyan, is supposed to mark his having reformed the calendar. He cuts down the 260 years of the Hyksos great kings to 179 years, freely overlaps the xiiith, xivth, and xvth dynasties, and takes the corrupt reading of 153 years for the xiiith, which disagrees with the average of recorded reigns. His scheme therefore runs as follows:—

xiii th dynasty	xiv	xv	xvi	xvii
<u>1898 B.C.</u>				
	<u>1879</u>			
		<u>1857</u>		
<u>1746</u>	<u>1746</u>			
		<u>1678</u>		
			<u>1678</u>	
			<u>1576</u>	<u>1727</u>
				<u>1576</u>

On this scheme the Hyksos invasion by Salatis came in the reign of Neferhetep, but no effective hold on all Egypt took place till after the great Sebekhetep family, and after king Ay. This is the best settlement that has yet been put together for the short scale of chronology, but it involves a triple overlapping, including cognate dynasties, and a repudiation of recorded reigns.

Another proposal is brought forward by Mr. Nicklin (1928). He is likewise held up by the Berlin limit for the xiith dynasty, and from a mass of detailed criticism, which is highly debatable, the final result is that he places

	xiii			
xii no. 1-22				
1807 no. 23	xiv	xv	xvi	
	1623			
1560				
	1523			
			1289	

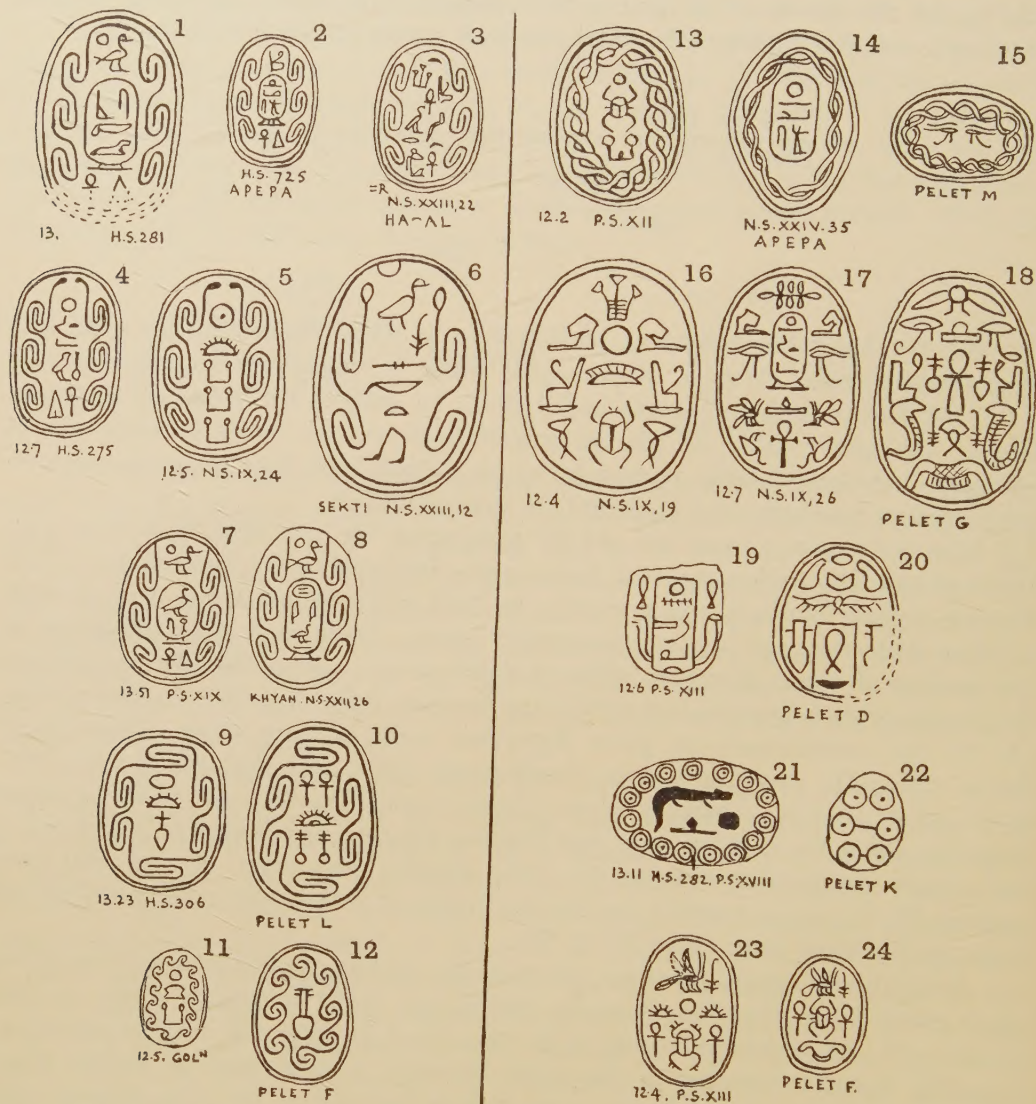
But the Egyptian conquests of Palestine, in Zahi (Phoenicia) by 1582, and at Naharaina, near Aleppo, about 1530, make it impossible to suppose that a line of Syrian princes was recorded down to 1289 in the series of Egyptian kings. The great mass of textual emendations on the basis of monumental numbers is entirely beside the mark, as on papyri both Egyptians and Greeks used cursive numbers which cannot be thus amended.

Now this past winter we are in possession for the first time of a long series of scarabs belonging to a large part—perhaps nearly the whole—of the Hyksos period, found in the cemetery at Beth-pelet. From these it is possible to deal with this age on a monumental basis. There is a wide difference in the quality of work shown in different tomb-groups. Provisionally the groups can be placed in a sequence of styles, and lettered from A to W. In two groups (A, B), the resemblance to good Egyptian work is very close. Soon there follow (in C, D), rougher figures, decomposed signs, and the late Hyksos type of a name between vertical lines. Then comes (F, G), the *rda-n-ra* type, senseless signs, Ra holding uraei, and Hathor. Clumsy lion figures follow (J, K, L), and rough mechanical designs (N). The gazelle, and rows of ring and spot pattern (Q, R), are succeeded by the last stage, of twists, and side lines derived from decomposed *neter* signs (S to W).

Amid these changes there are, down to the middle of the series, various types much resembling Egyptian examples which are dated to known kings (p. 38). So close is the comparison that it is very hard to suppose that these types, decaying and disappearing in the xiiith dynasty, were revived at a later time. The fine continuous border of circular spirals belongs to the xith dynasty and disappears after Senusert I, never appearing on Hyksos scarabs. The border of ovate links begins under Senusert I, and continued till two examples in the xiiith dynasty (Figs. 1, 9), and is never dated later; but it was used by Apepa I (2), Khyan, and once by the vezier Ha-al (3). A variant has the links separate at the top, apparently ending in serpents' heads; such belongs to the close of the xiith dynasty (4, 5), and was used by king Sekti (6). The plain separation at the top is rare in the xiiith dynasty, but was used in very rough work, down to the close of that age, by Nehesi (7), and is parallel with much better work of Khyan (8). The links arranged in a square occur under Sebekhetep IV (9)

and at Beth-pelet in group L (10), halfway through the series. The S-links appear late in the xiiith dynasty (11), and in group F at Beth-pelet (12).

The twisted cord comes early in the xiiith dynasty (13), also used by Apepa (14) and at M in the Beth-pelet series (15). The placing of scattered pairs of signs around a name is seen in the middle of the xiiith dynasty (16), and at the end (17); it was a favourite style in the Hyksos age (18). A square



frame enclosing the name appears late in the xiiith dynasty (19), and in group D at Beth-pelet (20). The use of a row of circles, with central dots, made by rotating a centre-bit, began in the xiiiith dynasty (21), and at Beth-pelet in group K (22), and continued very usual until the middle of the xviiith dynasty. Lastly, the arrangement of a name with other signs, in the middle of the xiiith dynasty (23), is very closely parallel to a scarab from group F at Beth-pelet (24). In these examples of ten different types, the fashions of the xiiith and xiiiith dynasties have been so obviously copied that it seems impossible to regard the Hyksos forms as belonging to a much later series, for these types

had vanished by the xivth dynasty. This constitutes a strong case for the Hyksos age having been contemporary with the close of the xiiith and all of the xiiiith dynasty.

Having gathered this contemporary evidence, we may turn to see how it may consort with the literary record. If we use the record of Manetho, it must be by placing the xvth and xviith dynasties side by side with the xiiiith, xivth, and xviith. The first question is the starting point; how early can we place the entry of Salatis, the first of the six great kings? The Delta was occupied by Senusert III, whose statues were at Nebesheh, and buildings at Khataaneh, Moqdam, and Bubastis. But of Amenemhat III there is only the base of a figure at Yehudiyeh; of Amenemhat IV there is nothing, and of Sebeknefru perhaps a small sphinx at Khataaneh. From the monuments of Tanis no conclusion can be drawn regarding the Delta, as it has been shown by M. Daressy that Rameses II had decorated that site by pillaging other temples. It appears that the Delta may have been weakly held at the end of the long reign of Amenemhat III, and the feeble reigns of his children allowed the invasion from Palestine to gain a full hold. It would thus be possible that the reign of Salatis might have begun in the Delta at about the close of the reign of Amenemhat IV. There are, however, some monuments of the xiiiith dynasty in the Delta; in the 2nd reign at Benha, in the 4th at Sebennyos, the 15th and 20th at Bubastis, and in the 17th statues probably from Memphis. Thus the lower Delta may have been gradually occupied during the earlier part of the xiiiith–xvth dynasties, and the whole of it up to Memphis by the time of the 21st king. For the first 100 years the Hyksos were comparatively weak, under Salatis, Beon, and Apakhnas; but during the reign of Apepa I they conquered the whole country. Turning to the xiiiith dynasty, the last king planted in the Delta was the 20th and that, on the average length of the reigns, may have been 150 years after the beginning. So there would be time for Apepa to have occupied all the Delta and claimed rule over all Egypt. Counting back from the end of the xviith dynasty, the recorded periods adjust themselves thus:—

end of xiiith dynasty	2375 B.C.	2375 B.C.
	xiiiith dynasty 453 years	xvth dynasty 260 years
		2275
last Delta statue	2230?	Apepa
Apepa at Gebeleyn		
Ra-kho-nefer	2200?	2214
Khyan at Gebeleyn		Khyan
		2164
		Assis
		2115
		xviith dynasty 518 years
end of xiiiith dynasty	1922	
	xivth dynasty 184 years	
end of xivth dynasty	1738	
	xviith dynasty 151 years	
death of Seqenen-ra	1597	1597
accession of Kames		
end of xviith dynasty	1587	

This adjustment involves the conquest of the south late in the reign of Apepa; Ra-kho-nefer Sebekhetep IV recovering power down to Memphis at Apepa's death; then Khyan later repelling him, so that no native kings afterwards appear on buildings north of Abydos. So far there is no impossibility in the adjustment, and the close of the xvth dynasty exactly falls on the date already assigned to the final battle in which Seqenen-ra lost his life when conquering the Hyksos.

The above arrangement does not at all imply that there were not at various times collateral lines of other provincial rulers; one such line ruling at Edfu appears to have been parallel with the xiiith dynasty of Abydos and Thebes, as pointed out in my *History* (1922), p. 229.

Turning now to the external difficulties of the case. First of all there is the rising of Sirius in the reign of Senusert III, as already specified. In place of the date 1786 or 1898 B.C. for the end of the dynasty (according to which month began the year), the date we have reached by the lengths of dynasties is 2375 B.C. At the latter date, if the 197th day of the year agreed to the rising of Sirius, the new year day from which it was counted was on December 11. This is as close to the seasonal new year, Dec. 22, as our own new year Jan. 1. Our shift is due to small causes of mis-reckoning (said to have been for agreeing with a new moon), and equally therefore the Egyptian December 11 would be recognisable as the seasonal new year. All the difficulties which have tormented chronology for thirty years past have been due to the assumption that the 365-day year was followed in noting the observation of Sirius, but as there is nothing in the statement in a current diary to prove which reckoning was there followed, it is rational to accept the seasonal year which accords with the history otherwise.

Next there is the question of how the Egyptian came to record the series of dynasties as he did. The Turin papyrus does not extend beyond the xiiith and xivth dynasties, as the number of names in that period agrees with the total recorded by Manetho. The position of the Hyksos was not therefore defined till some time near the Greek age. By that period the Hyksos list of the Delta seems to have been appended to the Turin list of Upper Egypt, and then the whole was accepted as continuous.

Some seasonal dates must be considered. The quarrying season marked on stones at Meydum would, on the seasonal year of $365\frac{1}{4}$ days, be from June to November; this agrees with the spare time when there is no agriculture. The seasons of quarrying in Sinai would sometimes be in the heat on either reckoning, and the best known one of Hor-ur-ra, describing the heat, is dated in the 7th to the 9th month, or July and August of the seasonal year. The other inscription of the xith dynasty is in the third month or February-March. The Hamamat quarry inscriptions fall in the middle of February, and early in March, April, and end of April. The Herkhuf letter of return from Nubia was written at the beginning of March. The quarry inscription of Una records his building a boat in October or November and then finding the water insufficient, as it would be if he desired to bring stone down on the flood. One inscription falls in the heat, late in August, but that was not of quarrying but of the return from Punt, when even Egypt was preferable. The inscription of Tahuti-nekht about the flax harvest would place it in the second week of April; the Coptic calendar places this harvest at March 19, about three weeks earlier.

This seems to be the worst discrepancy, which may be due to rather different date of sowing. In other cases also, the natural seasonal calendar accords with all of these seasonal records. The season of the storm named on the mathematical papyrus at the beginning of the year would be in December, on the seasonal year. The Egyptians now habitually use the lunar year, shifting round the seasons, for religious or official purposes, and the seasonal year when talking of agriculture. So there is no difficulty in accepting that they used two different reckonings anciently to say nothing of four different new years.

There remains now to be considered the relation of these dates in Egypt to history elsewhere. In Babylonia there is no safe synchronism as early as the xiith dynasty, but in Crete there are connections as far back as the 1st dynasty. Taking the more definite relations, we have synchronisms as follow. The page references are to Evans, *Palace of Minos*.

B.C.	dyn.			
2600	xi	M. M. I	(p. 202)	
2450	xii	} M. M. II	(270)	
2350	xiii			
2150	xv	M. M. III	(420)	
1550?		L. M. Ia	(II 362)	8 armed octopus, natural
1500?		L. M. II		8 armed " artificial
				4 armed " degraded
				2 armed " crude
1400	xviii	L. M. III		2 armed " very degraded.

During L. M. II there was time for the degradation of the octopus figure from eight to four arms, and then to two conventional spiral arms; this implies a considerable interval, suggesting an earlier date for L. M. Ia than the above. The beginning of L. M. III cannot be put later than 1400, as it includes the Aegean pottery at Amarna, which was imported, broken, and thrown away by 1370 B.C. Considering the long period of Early Minoan, there does not seem to be any improbability in Middle Minoan and Late Minoan together occupying some twelve centuries.

The general opinion held to be in accord with the monuments, apart from the Sothis-year theory, is shown by the following dates which have been assigned to the end of the xiith dynasty.

Lieblein	in 1873	2108 B.C.
Evans	1905?	2200
Brugsch	1877	2233
British Mus.	1909	2250
Hall	1901	2300
present result	1929	2375
Petrie	1902	2565
Brugsch	1859	2599
Mariette	1876	2640
Maspero	1915	2840
Mariette	1860	2851

Future discoveries will doubtless give further precision. Yet it may be convenient to review the present position of the dynasties, according to the Egyptian reckoning, in the light of the present resettlement.

Dynasty i	begins	4553 B.C.	Dynasty x	begins	2814 B.C.
ii		4300	xi		2629
iii		3998	xii		2586
iv		3784	xiii		2375
v		3500	xiv		1922
vi		3282	(xv		2375
vii		3084	xvi		2115)
viii		3014	xvii		1738
ix		2914	xviii		1587

FLINDERS PETRIE.

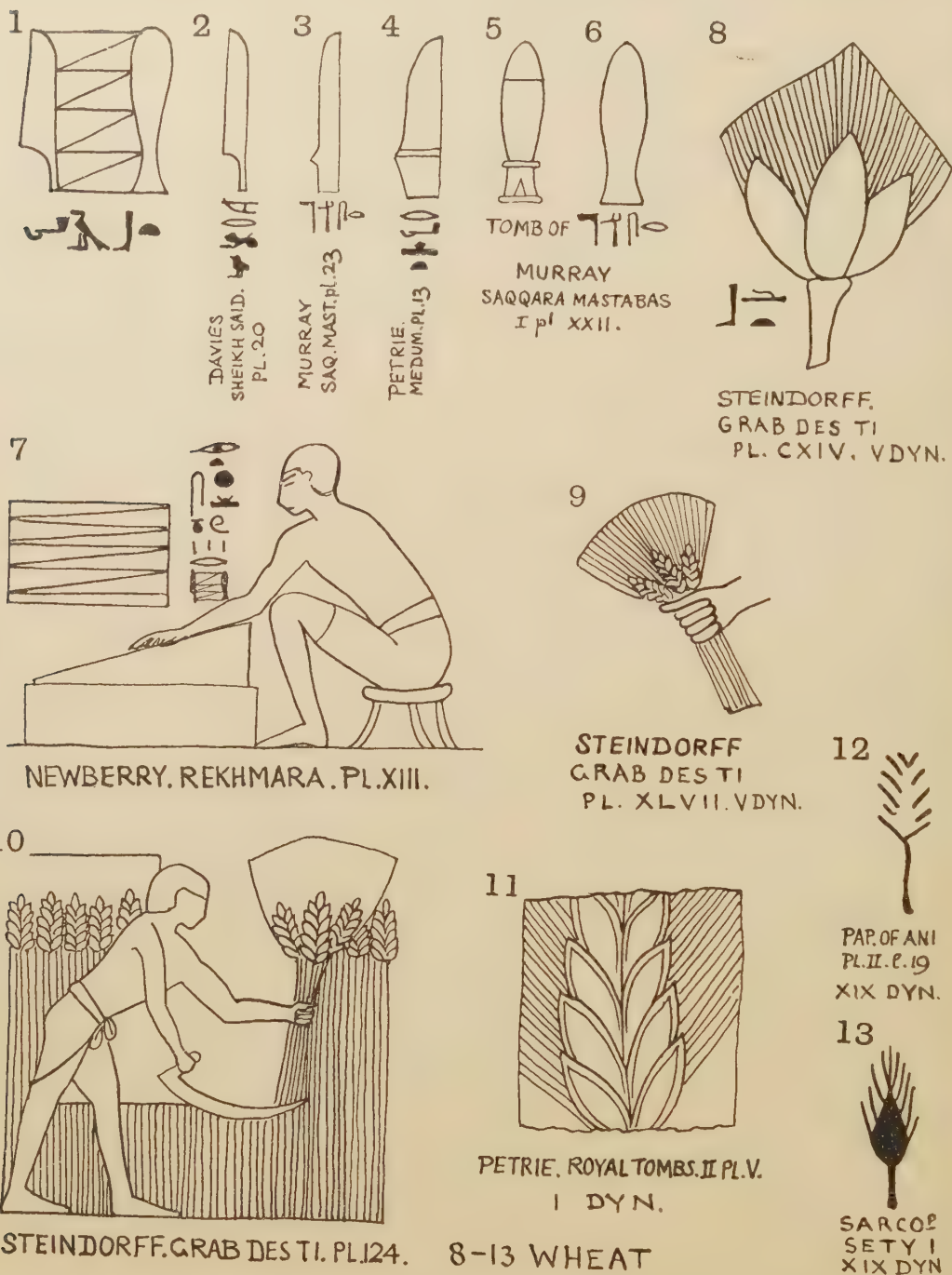
THE SIGN OĀBT .

. This complicated sign reads    and means "an offering" (Fig. 1). Erman, misled by the , places it under the heading of plants, with which it has no connection. The meaning of the word, for which it is sometimes the determinative and sometimes the word-sign, gives the clue. It is in reality a number of offerings placed together, and when split into its component parts these offerings are clearly visible. The first part of the sign is . The table of offerings, at which the deceased is represented sitting, is in the Old Kingdom covered with , in the vth and vith dynasties these are coloured green and are evidently thought by the artist to be leaves. But Griffith (Hieroglyphs, p. 54) points out that originally these were not leaves but slices of bread, the shape and the colour being identical with the loaves of that period (Figs. 3 and 4). The second part of the sign is , usually supposed to be the sign which reads  and is generally translated "Majesty." This is a mistake. On reference to the piles of offerings in the wall-sculptures in the tomb of User-neter (Saqqara Mastabas I, pls. xxi-xxiii) a number of vases will be found, sealed with large clay caps and standing in circular pottery stands; the vase has a wide mouth and a pointed or rounded base (Fig. 5). When drawn in outline without detail (Fig. 6) the object approximates as closely to the sign  as the slice of bread does to . The third part of the sign is formed by zigzag lines between the two uprights. In the tomb of User-neter there are a certain number of tall pyramidal objects represented; being too tall for their width they are sometimes leaning against heaps of other offerings, and are sometimes laid on the ground in piles one above the other, the wide end of one against the narrow end of the one below. In the tomb of Ti (Steindorff, pl. 47) a man carries a little pile of these objects in his hand. In the tomb of Rekhmara (Newberry, pl. xiii) there is a kitchen scene in which the cooks are making what appear to be cakes, which are shaped like the objects in the tomb of User-neter and are stacked in exactly the same way, though in greater numbers; the effect given is that of the zigzag lines in the sign (Fig. 7). The inscription by the side of one of the cooks gives the words "Making *sekhenu* for offerings" with  used as the word-sign for offering.

The whole sign then is a picture of the food and drink offerings, the bread and beer of the funerary prayers.

Fig. 8 occurs as the name of one of the landed possessions of Ti, following the names of two other possessions, which read respectively   and  . The relative position of the three suggests that these were the corn-lands

grouped together. There are two varieties of *seshet*-corn, green and white. Unfortunately there is no means of identifying the species, as the objects carried in the baskets of the women from the *seshet* fields contain when visible



nothing different from the contents of the baskets of other corn-fields. The woman of Ti's *seshet* field carries a box on her head, presumably full of grain though nothing can be seen. In the absence of any definite information it may be allowable to make a suggestion founded on the two colours of the grain,

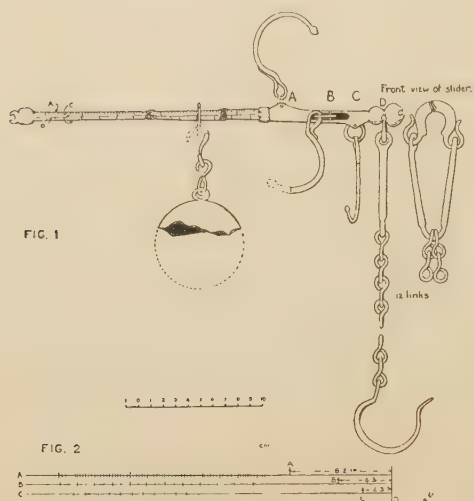
which points to the use of the corn both ripe and unripe. The only corn which is commonly used in both stages is maize, which was well known in ancient Egypt. The *yshed* has been called "apricots" by M. Maspero, but the determinative is certainly that of corn and not of fruit, and the position of Ti's *yshed* farm as the leader of the corn-lands bears out this supposition. The third of Ti's corn-fields is written with the sign given in Fig. 8. At first sight it appears like a flower, but on closer examination it proves to be a bunch of ears of corn, reading *bd.t*. Fig. 9 shows a similar bunch carried in the hand, and in Fig. 10 a reaper is holding another bunch preparatory to cutting it. The grain (Fig. 11) can be absolutely identified from a fine piece of 1st dynasty carving from the royal tombs at Abydos. The arrangement of the spikelets proves it to be wheat; it is not spelt, for in spelt the stalk is visible between the spikelets; it is either *triticum sativum dicoccum* or *triticum sativum durum*. *Dicoccum* grows along the North of Africa, while *durum* is confined to Europe; but the divergence of the awns in the specimen more nearly approaches the *durum* type. The late form of the sign is shown in Fig. 13 from the Sarcophagus of Sety I, and Fig. 12 from the Papyrus of Ani.

M. A. MURRAY.

A REPAIRED STEELYARD.

THIS steelyard was bought at Minieh, where it may well have been found. It is the property of Mr. Donaldson of the Egyptian State Railways, who has permitted me to publish it. It is made of bronze, and is in fair condition. The type is known in Coptic use, as published in *Weights and Measures*, pls. xvi, xvii. By the three hooks for suspension, A, B, and C, different edges were brought upwards for observing the place of the counterpoise. This is of a spherical form, but it has been badly crushed out of shape. It is formed of a copper shell, containing reddish earth or rust with metallic fragments embedded in it.

The arm has been broken in two places, and mended with a dark, lead-like, solder. The repair on the left has been very badly done, with the result



that it has made the arm nearly a quarter of an inch longer than it should be. The scales are cut on three edges of the arm, which is of diamond section. Scale A is divided into halves and twelfths; scale B into halves; scale C has equal divisions throughout, Fig. 2 shows the three scales, side by side, the error due to the length of the arm having been eliminated.

The meat to be weighed was held by two large hooks, one of which remains, attached by chains to the slider or saddle, at the right hand. On lifting any one of the suspensors at A, B, or C, the saddle swivelled round in the grooves at D, and so it was always at a constant position on the length of the beam.

By the principle that "the distance from suspensor to saddle reads the same on its own scale, whichever side is measured" (*W. and M.*, p. 30), we can identify each scale, which is copied below, with the hook which was used for suspension. Thus the distance from A to D reads as 2.85 units on the scale A; B to D reads as 3.0 on the scale B; C to D reads as 2.7 on the scale C. As the makers of steelyards never knew this principle, but divided them by trial and error, the small differences in results easily occurred.

Not having the weight of the beam, nor the centre of gravity, known, we cannot calculate the unit; but the division in twelve strongly shows that this was for the Roman libra and uncia, like the majority of Coptic steelyards. The scale A would read from 4 unciae to 6 librae, B from 5 to 15 librae, C from 16 to 36 librae. The counterpoise would have weighed a libra $\div 2.9$, or about 4 British ounces. The remains of little holes at each end of the beam are probably for attaching small amounts to adjust the correctness of reading from time to time.

Therefore at least four names of Egyptian beans are known from ancient times:

- a) *hrw byk* This word, which is known to me only in the above-mentioned text, does not occur in the Erman-Grapow Wörterbuch, either under *hr* or under *b*. Botanical name:
Cicer arietinum L.
Arab.: *hommos* جعر
- b) *iwr.t* and var.: = Copt.: $\lambda\rho\omega$ (S), $\omicron\Upsilon\rho\omega$ (S). Botanical name:
Vigna sinensis Endl.
Arab.: *lūbia* لوبيه
- c) *pwr, pr* = Copt.: $\phi\epsilon\lambda$, $\phi\epsilon\lambda$ (B) = Hebr.: פיל = Arab.: فؤل. Botanical name:
Vicia faba L.
Arab.: *fūl* فول
- d) *ršn* and var.: = Copt.: $\lambda\rho\omega\iota\eta$ (S.B.F), $\lambda\rho\omega\iota\eta$ (S) = Hebr.: עדשה = Arab.: عدس. Botanical name:
Lens esculenta Mch.
Arab.: *ʿads* عدس

L. KEIMER.



RECENT ANALYSES.

AN increased activity in analyzing ancient metal objects, and publication of the results, shows a welcome spread of scientific archaeology. The British Association Committee under Mr. Garfitt's management has collected much in search of the mixture of nickel or other elements that are unusual with copper. Out of 68 specimens from Mohenjo-Daro only 9 were bronzes; 8 contained over $\frac{1}{2}$ per cent of nickel, one a nickel bronze with 9 per cent; lead was never in alloy. From queen Shubad's tomb a good bronze was found, of 8 per cent tin. Central Asian specimens from Makran were mostly high tin bronzes, even up to 32 per cent. From earlier results, nickel appears as 2 or 3 per cent at Ur and Kish. Tin is usual in Mesopotamian alloy, even up to 14 per cent. The search for sources of metal has not yielded much, except at a point outside of the strait of Bab-el-Mandeb, where the proportion of nickel to copper was 1 to 8.

The early Chinese bronzes have been lately analyzed in Japan, and the results published by Mr. Umehara. Of 14 bronze vessels mostly about the Han period (B.C. 200 to A.D. 200) the tin is usually 10 to 15 per cent; the earliest (B.C. 250) has only 2 p. c. tin, with 41 p. c. lead, but lead is usually about half as much as tin. Iron, nickel, zinc, and arsenic, are only slight impurities. Antimony is usually slight, but in the latest specimen (A.D. 265 to 589) it is 9 p. c. Mirrors differ from the vessels, in having more tin, usually 25 to 30 p. c., in one of the finest 49 p. c. The other ingredients are much as above, except in one instance of 1.83 p. c. of nickel, 4.46 p. c. of antimony, and 2.63 of arsenic.

Lead has been examined for silver content by Dr. Newton Friend (Institute of Metals, paper 495). Ordinary commercial lead now, desilverized, contains in 10,000 parts, .2 silver. Sumerian of 3000 B.C., 1.3 silver. Egyptian of 1400 B.C., 2.8 silver. Assyrian of 600 B.C., 1.1 silver. Spartan, 600 B.C., 5.6 silver. British, 200 B.C., .7 silver. Cyrene, 100 A.D., 1.4 silver. Italy, 100 A.D., 1.0 silver. Roman, Bath, 100 A.D., .3 to .5 silver. Roman, Caerleon, 200? A.D., .2 silver. Roman, Uriconium, 200? A.D., .5 silver. Roman pigs of lead .3 to .8 silver, but one from Somerset 2.5 silver. Mediaeval lead .3 to .9 silver. As some of the Roman pigs have EX ARGENT, it seems that they were desilverized, as also the mediaeval specimens. It paid in modern times to re-smelt all the scoriae at the Mendip mines, to recover the silver lost there by Roman working.

FLINDERS PETRIE.

REVIEWS.

Dramatische Texte zu altägyptischen Mysterienspielen. Vol. II. *Der dramatische Ramesseumpapyrus.* By KURT SETHE. Pls. 21, pp. VIII + 181 (Leipzig, Hinrichs), 1928.

An adequate review of this volume of the most ancient of all mystery-plays would require a small book; here it is only possible to indicate a few, very few, of the most important points. That the translation and commentary are by Professor Kurt Sethe is a guarantee that the work is both brilliant and scholarly. The content of the volume is extraordinarily interesting. There is a fascination in mystery-plays of any period, for they show the popular conception of a religion directed and controlled by the priesthood. In this example the conservatism of ancient Egypt appears to have preserved certain beliefs and customs long after they had passed their prime. The date of the actual play can be determined as being of the Middle Kingdom, partly by the name of the King, partly by the other papyri with which it was found; but there is no doubt that the drama had its source in a much higher antiquity, perhaps even as early as the Proto-dynastic period. The action of the play represents the ceremonies connected with the burial of a King and the installation of his successor (in this case, Senusert I). The ceremony of the coronation began by the presentation to the new Pharaoh of the two feathers, two sceptres, a gold ring, and finally an offering of food from "the two Provinces." The feathers and sceptres were the first to be presented, and this ceremony took place on the "Great Sand"; this, as Prof. Sethe points out, must be some place definitely connected with the coronation for it can be paralleled by the "High Sand" at Heliopolis mentioned in the account of his coronation by Piankhy. The double feathers are often connected with the god of generation, Min; and in this text the two sceptres are clearly identified with the generative power of Seth, which Horus, i.e. the new King, incorporates into himself. The ring is also connected, though obscurely, with Seth; while the *wdn*-offering is given from the Two Provinces, presumably the whole of Egypt. Thus the Pharaoh was invested with the power of fertility over Upper Egypt, which as Horus he had already possessed over Lower Egypt. After the presentation of these symbols the personal decoration of the King was performed by means of green and black eye-paint, while resin and incense were offered (burned) before him. Then came the great ceremony of the actual crowning by the Guardian of the Feathers, followed by the coronation banquet. The play ends with the funerary ceremonies for the dead King as performed by his successor. Throughout, the method of presenting the scenes is partly by words spoken by various gods, and partly by stage directions; the papyrus is therefore a stage-manager's manual with "captions." These captions might have been spoken by actors dressed as the gods, or might have been read out by some official; the scenes being certainly

acted in dumb show. This is the fullest dramatic piece which remains to us from Egypt, but from it a number of others in a less perfect state can be recognised, e.g. the Shabaka-inscription in the British Museum. There is one small point which is very interesting: the god Tehuti is continually mentioned by the epithet , "Bread." This at once explains the meaning of the personal names of the three Seqenen-Ra Kings of the xviii dynasty, all of which begin with the words Ta-aa "Tehuti is great." The only criticism which can be made on this very remarkable book, remarkable even among the many works of Prof. Sethe, is the question as to the latitude which can be allowed in filling up lacunae. A few of Prof. Sethe's suggestions in this direction are more than a little daring, though his profound knowledge of the language and his wide experience often give a brilliant result.

M. A. MURRAY.

Pots and Pans. By H. S. HARRISON. 16^{mo}, 88 pp. (Howe), 1928. 2s. 6d.

This handbook gives a general outline of the materials and methods involved in making pottery. A little more archaeology would have been useful; for instance, the use of pots on dusty ground in a dry climate led to having ring-stands and therefore round bases to the pots, as flat bases would soon be dirty on a damp pot. Another type of round base is when the centre of gravity is below the centre of the curve, as in big water jars; then the curved base allows of easy tilting by rolling over. There is no imperfection in a round base as compared with a flat base; each is right in its place. The prehistoric Egyptian pottery gives excellent examples of the survival of its original forms; the Amratian in drawn copies of basket patterns, the Gerzean in direct models of stone vases. It may be noted, when naming "Samian" ware, that the figures were sometimes pressed in a mould and then stuck on to the wheel-turned bowl. The Greek red figure vases kept their colour owing to the red clay holding a red earth not a haematite oxide; hence it was not blackened in the reducing fire needful for the black ground. The black can be oxidised red and reduced black any number of times, and often a leak in the furnace let air in and produced red patches on the black ground. A last chapter about "diffusion" has the curious assumption that this is a new idea. But everyone has assumed the diffusion of inventions in all ages, along with the fact of frequent re-invention under the spur of necessity. There is no novelty, except in the denial of re-inventions. Our own Patent Office can tell the tale of incessant re-invention of the same idea from time to time.

Select specimens of the Archaeological Collection ... Kyoto. By Prof. K. HAMADA. 8^{vo}, xv pp. English, 29 pp. Japanese, 120 pls. (Department of Literature, Imperial University, Kyoto), 1928.

These illustrations of the collection, largely due to Professor Hamada's enterprise, show how the new studies are growing in Japan. Of the plates in collotype, 38 are of Japan, 52 of China, and 29 from other countries. These form an outline of the archaeology of Japan and China; it is curious to see Chinese writing incised on clay tablets, though later than Babylonian work, and open-work bronze buckles which are contemporary with the similar bronze of northern Europe in late Roman times. Archaeology is an old science in China and finds a grateful soil for its modern growth. Every good wish for it!

JOURNALS.

Zeitschrift für ägyptische Sprache. Vol. LXII. Part 1, 1926.

SETHE, K.—*Der Horus- und der nb.ty-Name des Königs Cheops.* In this article Sethe reverses the conclusions he arrived at in *Zeitschrift* XXX, p. 52 ff. regarding the readings of the Horus and Nebti names of Khufu. The word written with the sign  is now to be read *mdd* not *mdr*, even in the O.K., the  which frequently accompanies the sign in the Nebti name being a preposition. In several kings' names of the O.K., particularly in Dynasty IV, the Horus and Nebti names begin with the same word, but are not identical, e.g. Khafra, whose Horus name was , his Nebti name . Khufu's names are thus another instance of this custom, the preposition expressing a relationship to the goddesses: "Horus who is *mdd*, *mdd* to the two goddesses."

SETHE, K.—*Die mit den Bezeichnungen der Schiffergeräte  und  gebildeten Namen der Mentuhotp-Könige.* The signs in question are generally read alike in the Ra names of two kings called Mentuhotep of Dynasty XI. Though it is not impossible for two kings of the same dynasty to have the same Ra name, it is extremely improbable that they would spell it differently. The signs evidently relate to the two objects held by the king in the ceremony of running with the *hap* sign and steering oar. The inscription to this scene reads    , bringing the *hap*, thus naming one object only, and thus perhaps giving rise to confusion when the *hap* sign became obsolete. [For a different explanation of the *hap* see *A.E.* 1925, 3, p. 68.] It is impossible that these implements should have had the same name originally. The word for steering oar was probably *hrw*. It follows that the Ra names of the two Mentuhoteps were different, the elder's reading "Lord of the *hap* is Ra," the younger's being "Lord of the steering oar is Ra." The presence of these implements in these royal names shows that they must have appertained to the captain, otherwise they could not have been attributes of Ra in distinction to the crew.

SETHE, K.—*Neuägyptisches m-dr für m-dj. Mit Beiträgen zur Erklärung des Amenemope-Buches.* Spiegelberg showed in *Zeitschrift* LX that the preposition  *m-dj* is written  *m-dr* in some N.E. and demotic texts, looking like the N.E. temporal conjunction *m-dr* "as," "when," found in Coptic as $\overline{\text{NTEPEY-CWTM}}$ "when he heard." Sethe shows that this substitution is due to similarity in sound, for whilst Coptic $\overline{\text{NTEPEY-CWTM}}$ corresponds to late demotic *n-d.t ir-f sdm*, its *r* being derived from the auxiliary verb *ir*, the temporal

particle, deriving from N.E.  , had the sound value $\bar{N}TG$ -. He instances a parallel substitution of   for   in the case of the imperative negative     *m-dyr* immediately before a noun or subjunctive, and adds six examples from the *Instruction of Amenemope* to the two detected therein by Lange.

SETHE, K.—*Die angebliche Bezeichnung des Vokals ě im Demotischen*. Many words in demotic end with two small strokes before the determinative; these strokes are usually rendered by short *e*. Sethe suggests abandoning entirely this misleading transcription, or at least substituting for it *w*, *y*, *nw*, &c., according to the various derivations. He likewise proposes the substitution of *t* with a diacritic sign (*t'*) for final *t* (deriving from ) which is at present usually given as *te*, as if it were a vowel sound.

EBBELL, B.—*Die ägyptischen Krankheitsnamen*. This is a further section of an article which appeared in *Zeitschrift* LIX. The following identifications are now proposed:—

9.    = *Epilepsy*. The remedies for this illness make this identification practically certain, as similar remedies were prescribed for epilepsy by the Greeks. The Egyptian remedies include goat's blood and the faeces of a donkey (the latter presumably to exorcise an evil spirit). Celsus asserts that some sufferers were cured by drinking the warm blood of a gladiator, so that the Egyptian remedy was less barbarous. This belief persisted until quite recent times as a superstition, as epileptics would frequent executions in order to receive human blood.

10.    = *Haematuria*. This equation seems very plausible, as this complaint is endemic in Egypt. It is caused by a parasite worm whose eggs have been found in mummies. It is possible that the ancient Egyptians knew the parasite, in spite of its small size and inaccessibility, as a passage in the Ebers Papyrus (19, 11-18) emphasizes the connection between *hrt* worms and ʿ^c .

11.    = *Blisters* (Bullae).

12.    = *beter-el-temer*. The name suggests a complaint which is endemic in various parts of the East, and is called *Bouton d'Orient*, Oriental Sore, &c. In Egypt it is called *beter-el-temer*, Date Sore, because it breaks out regularly in the date season. The probability is that the ancient Egyptian name and the Arabic term denote one and the same illness, in which case the Arabs must have taken over the name from the Egyptians.

DAWSON, WARREN R.—*Three Anatomical Terms*.

1.    *mnd·t*, "cheeks." In his preliminary account of the Edwin Smith Papyrus, Professor Breasted expressed the opinion that *mnd·t* is probably a maxillary bone. But the Egyptians had no separate terminology for bones, so that the word must denote the region in which the bone is situated, i.e. cheeks.

2.  *wdd*, "gall," "gall-bladder." This word has hitherto generally been translated "brain." It is found in the list of parts of the body in Pap. Berlin 3027, Verso, 5, 3, between "lungs" and "spleen," indicating an abdominal viscus. This interpretation was confirmed by a passage in the Vizier Inscription, "bitter as *wdd*."

3.  *kns*, "pubes, hypogastric region." This reading is based on material which has been published since Loret's work on Pap. Ebers, when he proposed the meaning "perineum" instead of the former "bas-ventre."

SPIEGELBERG, W.—*Der heilige Widderkopf des Amon*. In an unpublished papyrus of the xxth dynasty at Turin occurs the personal name  *P3-hr-n-'mn-nhtw*, "the head of Amon is strong." Names of this form are theophorous; in this case the divine constituent, "the head of Amon" denotes the horned ram's head, which so often appears as a symbol of Amon in the N.K. and later.

SPIEGELBERG, W.—*Die Falkenbezeichnung des Verstorbenen in der Spätzeit*. The words *p3 'hm* in front of a name in the Hellenistic period are explained as "he who has become a falcon." This prefix is found in many Greek names as *Παχου*. Other terms current in the Late Period for the deceased are *h3y* "the drowned," *p3 h3y* "the lord," *p3 rmt '3* "the great man," and *p3 ntr* "the god," all to be taken as designations of Osiris, with whom the deceased was identified. The writer would also interpret the prefixes *παχου* "the falcon" and *ποχρου* "the frog," when applied to the dead, as personifications of the god of the dead, from which idea the general term "deceased" was evolved, as in the case of "the Osiris." The article concludes with an account of a sandstone stele (No. 22468) recently acquired by the Berlin Museum.

SPIEGELBERG, W.—*Der Gott Nephotes (Nfr-htp) und der κυβερνήτης des Nils*. A god named Nephotes occurs in the Silsile inscription (Preisigke, *Sammelbuch*, No. 23). Spiegelberg suggests that this passage indicates Nile festivals at Silsilis, at which the priest of the sacred bark bore the title "steersman" (*κυβερνήτης*); the god worshipped being the Nile, who in the Late Period bore the epithet *Nfr-htp* = *Νεφώτης*, and was represented as a crocodile. In this way *νεφωθ* would acquire the meaning of crocodile. Spiegelberg shows that the first three letters of the word *βαι-νεφωθ* = crocodile (*Aegyptus* VI [1925], p. 197, No. 405) represent *b3* = soul.

SPIEGELBERG, W.—*Der Schlangengott Pe-Neb-onch*. The name *Ns-nb-'nch*, "belonging to the lord of life," was a common one in the Late Period.

The nature of the god referred to in this theophorous name is revealed by a painted coffin of a mummified snake (Berlin Museum, No. 7232), with a representation of a man offering to a uraeus snake () and a demotic inscription in which the viper is invoked as *P3-nb-'nh*.

SCHÄFER, H.—*Das Schlangensärgchen Nr. 7232 der Berliner ägyptischen Sammlung*. This article is a description of the snake's coffin mentioned in the preceding article by Spiegelberg. The coffin was found or bought in Thebes by Minutoli.

It is now considered to be pre-Ptolemaic, probably of the Persian period. On the back of the coffin is painted a man with arms extended and forearms and hands raised, as in the attitude of rejoicing (). Spiegelberg considers this to be an attitude of prayer, though little is known about Egyptian cult movements and positions, and though this particular attitude has not hitherto been found at so early a date.

SPIEGELBERG, W.—*Die Konjunktion*  *hr r^c "zu der Zeit wo, wann, wenn, da, weil."* Further instances are given of the use of this conjunction meaning "at the time when, when, since, because."

SPIEGELBERG, W.—*Koptische Miszellen.*

1. **ΛΑ2ΜΕ** "*Backtrog*" und **ΛΑΚΜΕ** "*Bissen, Brocken*." These two words are now shown to differ both in meaning and origin; the former means "dough pan" and is presumably of Egyptian derivation, while the latter means "morsel" and is derived from the Arabic.

2. *Das weibliche Qualitativ* **ΟΕΙΤ** "*gemacht*." A Coptic text is quoted which confirms one of Sethe's two suggestions (***ΛΕΙΤ**) for the vocalization of  *'ry·ty*, the demotic form of the feminine pseudoparticiples of *'ry*.

3. *Zu der Verschiebung des Worttones vor Suffixen.* It is suggested that the difficulty in understanding late forms, often classed as "barbaric," may be due to the displacement of accent which follows the addition of a suffix.

4. **СВОΥΙ** = "*Schüler*." It is suggested that Coptic **СВОΥΙ** is a Nisbe form of **СВΩ** : **СВΩΥ**.

5. *Das ägyptische Prototyp von* **2ΩΛ** : **2ΩΛ** "*heiser sein*." Spiegelberg now derives this word from *h3nr* "to be hoarse."

6. **2ΠΠΕ9** = *ἰππεύς*. This reading, given by Wessely, Spiegelberg considers correct, and sees in the Coptic ending **Ε9** the Greek vocative (*ἰππεῦ*) with the "New Greek" pronunciation of *εῦ* = *ef*, which stands for the nominative.

7. *Der mutmaßliche mundartliche Unterschied des koptischen* **ΛΒΒΛ** und **ΛΠΛ**. This title is given to monks who have passed through the novitiate. It is suggested that **ΛΒΒΛ** is the Northern form and **ΛΠΛ** the Southern, though the distinction is not a hard and fast one. The Ethiopian form *amba* agrees with this view, since everything that is Coptic in the Abyssinian cult is borrowed from the Alexandrian Church, and *amba* could easily arise from Boh. **ΛΒΒΛ**.

8. **ΝΤΑ9 СΕ** (A) "*er ist es*." Spiegelberg instances a survival in a Coptic text (Thompson, Gospel of St. John IX, 37) of the curious use in New Egyptian of  meaning "it is thine."

9. ***2ΙΝΕ** : ***2ΙΝΙ** "*bewegen, beugen (?)*." Spiegelberg traces the verbal form **2ΝΤ** = (Zoega, *Catal.* 340 = Steindorff, *Kopt. Gramm.*² p. 13*) to this verb, which he derives from  "to bend."

BLOK, H. P.—*Die griechischen Lehnwörter im Koptischen.* The Greco-Roman loan words yield valuable information on the phonetic laws of the Alexandrian and later periods, particularly as the Egyptian scribe was frequently compelled to transcribe a Greek word by ear phonetically, through ignorance of Greek. The writer makes a selection from a list of some 4000 Greco-Roman loan words to elucidate the laws which may be compiled from them.

Miscellanea.

SETHE, K.—*Das Zahlwort "fünf."* Sethe now shows the reading of the numeral five to be masc. *dy.w*, fem. *dy.t*. In *Zur ägyptischen Herkunft des hebräischen Maßes Ephä* he brings forward confirmation of the derivation of the Hebrew measure Ephä from  *ipt*.

NEUGEBAUER, O.—*Über die Konstruktion von sp "Mal" im mathematischen Papyrus Rhind.* The writer analyses the rules underlying the combination of *sp* with numerals; those below 10 have *sp* in the plural, while those from 10 upwards have it in the singular.

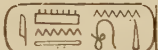
ALBRIGHT, W. F.—*The date of the foundation of the early Egyptian temple of Byblos.* The writer holds that the foundation cannot fall much earlier than Mencheres of the vth dynasty. [But vases of the iind dynasty occur there.]

Under the heading *Aman-hatpe, Governor of Palestine*, the writer discusses two letters found at Taanach which emanate from a high official of this name, and "the question may be raised whether this Amenophis ... is not identical with the Amenophis who was governor of Nubia under Thothmes IV."

A third contribution to this section by the writer is headed *Another case of Egyptian û = Coptic é*.

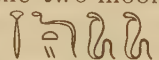
DAWSON, W. R.—*The Papyrus Lansing.* Since reviewing *Hieratic Papyri; Second Series*, 1923 in *J.E.A.* IX, 260, the writer has found two duplicate passages in this papyrus.

BISSING, F. W. VON.—*Zwei Gräber eines Toten.* With regard to Bonnet's theory of a connection between two tombs of a king and the double kingdom, von Bissing draws attention to the fact that private persons sometimes possessed two tombs.

STRUVE, W.—*Zum Namen des Königs* . A solution is given of the difficulty encountered in deriving cuneiform *Urđamani* from *Tnwt'-Imn*.

In an article headed *Ein Ägypter — Schwiegersohn des Sanherib*, dealing with an Assyrian deed of sale in which the first witness is called *Šusanġu* and is a son-in-law of the king, the same writer suggests that this name really represents the name *Ššnk*, and that the signatory was one of the numerous petty princes who ruled Egypt at the period.

WIESMANN, H.—*MNTA9 6CWTM er kann nicht hören.* The writer gives examples of the unabbreviated form of the expression *MNTA9-CWTM* to which Sethe drew attention in *Zeitschrift* 57, 138.

In *Elliptische Duale a potiori im Ägyptischen* he finds a parallel in two Egyptian duals to certain Arabic duals, which really represent two distinct words of which one predominates over the other, e.g. "the two moons," really "the sun and the moon." The Egyptian parallels are  "the two Butos," i.e. Buto and Nechbet, and  "the two sisters," an epithet of Shu and Tefnut, also of Osiris and Isis.

Wiesmann further contributes to this section notes headed *Zu zwei Schenute-Stellen*, *ⲱⲁ- Preis, Wert?*, *Fortsetzung eines Relativsatzes durch eine Hauptsatz-, bzw. Demonstrativsatzkonstruktion im Koptischen*, and *†-MGTANOIA* respectively.

L. B. E.

Comptes Rendus, 1927, July.

JÉQUIER, G.—*Les Pyramides non funéraires*. The discovery of the funeral pyramid of Uzebtén, queen of Pepy II, at a little distance from his pyramid, has drawn attention to the contrast between this and the other small pyramids known near those of kings. The tomb of this queen,—not yet published,—is noted for “the very remarkable style of its bas-reliefs.” Unfortunately no one can judge of this in the absence of any copies or even of any description. The contrast which is stated between this and the small pyramids adjoining the tombs of Khufu and of Menkaura, is hardly valid, as those great pyramids are equally void of sculpture; it was not till after the ivth dynasty that sculpture appears on a pyramid temple, and not till the close of the vth dynasty that inscriptions were placed in a pyramid. It is stated that in the vith dynasty the position of a small pyramid is always to the south of the temple, or south east of the large pyramid. A small pyramid stands in the same relation to that of Pepy II, without any chapel or sepulchral provision; while that of the queen has a stele, table of offerings, and a burial chamber lined with religious texts. Similarly in the time of Teta, at the beginning of that dynasty, there is a small bare pyramid near his, while the two tombs of the queens Khuat and Apuat are placed further away, and have the chapels for the service of the dead. In the earlier pyramids, of the vth dynasty, the adjacent small pyramids have no trace of provision for service: the internal chamber in each pyramid is unfinished. The conclusion of Prof. Jéquier is that such small pyramids were not for burial, but were symbolic, or perhaps served for the celebration of certain rites.

We may remark that there may be a parallelism between these small pyramids and the later model pyramids placed in tombs, such as that of Sebek-hetep in the reign of Sebekemsaf (B.M. 280) and others of the xviiiith and xixth dynasties (*Kahun*, xxii). At the beginning of the subject, there is the pyramid of Sneferu at Meydum, with a small pyramid on the south, and a pyramid or mastaba on the north, both within the peribolus wall. Both had sloping passages, and a meagre chamber (*Meydum*, viii, ix). At Gizeh, pyramid 7 of Khufu certainly had a sarcophagus or coffin, not over 38×84 inches, as the passages have been cut to allow it being turned. Until a scientific examination of all the pyramids is undertaken, the subject cannot be studied.

Comptes Rendus, 1928.

p. 23. Prince Soutzo described the Egyptian monetary system under Ptolemy I, as based on the old *qedet* of copper. The silver coins equalled 12 *qedet* and 8 *qedet*. [These would be equivalent to 10 *khoirine* and 5 *sela*, as if they were intended to keep touch with those systems.] The gold penta-drachm of the *sela* was of the value of a talent.

p. 34. Prof. Moret showed a gold plaque bearing figures of Amenemhat IV offering to Atmu, and a porphyry sphinx of Amenhetep IV “loved by Atmu,” the same inscription as on an obsidian box found at Byblos. These things are likewise “from Syria.”

p. 58. An unopened tomb at Deir el Medineh was found by M. Bruyère; it contained three coffins, a graduated cubit, bronze vases and other objects; it had belonged to a necropolis official, but was uninscribed.

p. 256. In the report of the Institut Français the work at Deir el Medineh is stated. The important tombs already opened there are those of Sen-nezem the architect (in Cairo, not published), and that of Kha head of the workmen (in Turin, not published). In the houses of the cemetery workmen, many ostraka have been found of the xixth dynasty; also later papyri showing that the ground was occupied in Greek times. The recent work is on tombs of the xviiiith and xixth dynasties. The reason of tombs here being unplundered is doubtless because they belonged to officials who had no riches buried with them. The first described is the tomb of Sen-nefer. It lay beneath a destroyed tomb of Hormes, dating before Akhenaten. The funeral furniture was good but simple; the mummiform coffins are of Sen-nefer, his wife Nefertiti, and a nameless infant. The notable objects are the wooden handles of a fan, inlaid with ebony and ivory; a pectoral cloth, painted with a scene of Sen-nefer seated before a table of offerings; a little pectoral of gilt wood; an ebony cubit; four rulers of pine, a cubit long, with invocations of Osiris, Ptah, Amen, and Har-akhti; and five little model vases of copper. On Nefertiti's finger was a silver ring engraved with a seated goddess (Isis), and an electrum ring with the Hathor cow in papyrus grove. Two small wooden ushabtis are not stated to be inscribed.

Another tomb was of the xxth dynasty, proved to have been completely destroyed. A shaft, 120 feet deep, that was opened contained only pieces of tackle which were used to remove the sarcophagus of Onkh-nes ra-nefer ab. This was extracted by the naval party sent to remove the obelisk for the Place de la Concorde in 1831, as proved by documents left in the pit. Like other French abstractions, as the Abydos Table of Kings, the sarcophagus was sold to the British Museum.

The excavations at Medamud are, happily, in course of publication, though the important section of the xiiiith dynasty has not yet appeared. The temple was begun by Ptolemy Epiphanes, 200 B.C. and continued till the time of Diocletian. The foundation blocks show that there was a temple of Euergetes about forty years earlier, or even of Philadelphos. The temple appears to have had a fore part (lying E. to W.) dedicated to a triad, and behind that the sanctuary of the sacred bull, lying N. to S. A gateway of Senusert III had been absorbed in the later temple. The triad was of Mentu, Rat-taui and Hor-pa-ra, superseded later by Amen, Mut, and Khensu. The building was arranged accordingly in a tripartite system. A large court at the back with a separate entrance was for public or private festivals. From the foundations of the later temples there have now been recovered 120 blocks of the xiiith and xiiiith dynasties. We have already seen report of remains of Ugaf the first king of the xiiiith dynasty; now there are reported, also, works of Ra-sezef-ka Amenemhat 14th king; Ra-sekhem-khu-taui Sebekhetep 15th king; Ra-sekhem-suaz-taui Sebekhetep 20th king; and Ra-sekhem-uaz-khou Sebekemsaf, whose position is not stated in the lists, but who has been supposed to be of the Edfu dynasty and to have held the Thebaid as about the 18th or 19th king of the succession.

p. 329). 9 Nov. 1928. M. Virolleaud, in his annual report on archaeological work in Syria, states "it has been decided that the portable antiquities shall be henceforward divided in equal parts between the State and the excavator; no measure appears more suitable to aid further the development of researches."

The previous regulations were not so favourable to the excavator, and they do not seem to have met with response.

p. 361). M. Jéquier found at Saqqarah statuettes of Ishtar and other Assyrian deities, which had the heads, arms, and legs sawn off, in order to destroy their power. He attributes them to the Assyrian invasion of the viith century.

p. 371). M^{lle} Homburger collects the Egyptian names of parts of the body compared with Negro-african: the resemblances seem but few.

Syria IX, fasc. IV.

PRZEWORSKI, S.—*Les figurines assises et le char divin*. Various Hittite figures of a seated deity here wear a conical cap with flat top, in fact a tarbush, but without any point or streamer hanging from it such as are usual on South Syrian figures. This form of cap seems to be that of the ivory figure of a god found with Ashtoreth figures at Beth-pelet.

JEAN, C. F.—*Les Hyksos sont-ils les inventeurs de l'alphabet?* This is a long article criticising in detail the various theories about the hieroglyphic inscriptions of Serabit, principally the view of Sethe. That the source of the alphabet was not the cuneiform is concluded because cuneiform had not only vowel signs, but different signs for each syllable according to the vowel, while Phoenician had no vowel signs. [This begs the question whether Semitic did not misappropriate vowel signs in the alphabet borrowed from elsewhere.] Nor was the alphabet derived from Cypriote, because Cypriote is later, and is syllabic, even thus adding vowels in transliterating Greek. Also it fails to distinguish different gutturals, and different dentals, which are markedly distinguished in Semitic. Nor was the alphabet derived from pre-hieroglyphic signary, because many signs are cursive hieroglyphs, or simple marks. [This might be said with equal probability of any beginning of an alphabet.] Lastly, there is the theory of an Egyptian origin of the Serabit script, and hence of the Phoenician. [Owing to the Nabathæan inscriptions being commonly termed Sinaitic, it is best to name this early writing from Serabit, where alone it is found.]

The Egyptian signs are classified (1) tri-consonantal (as *kheper*), (2) bi-consonantal (as *men*) and (3) mono-consonantal (as *ab*, *ur*). From the mono-consonantal were selected the signs for single consonants (as *b*, *m*, *n*). But the Egyptian never threw off the bi- and tri-consonants, so as to get a pure alphabet like Phoenician. Then when the Phoenician borrowed from Egypt, all the signs which he added were derived by acrophony, drawing an object the name of which began with the sound to be expressed. Sethe propounds that this development took place among the Hyksos expelled from Egypt to Sinai; this is supported by the Hyksos being termed by Manetho Phoinikes. Such an equivalent is supported by the name Fenkhu for people in Canaan in the xviiiith dynasty. [Misprinted xiii.]

The Serabit inscriptions are then discussed. From the Egyptian figure of a sphinx, the drawing of Ptah, and the presence of some Egyptian signs, it is concluded that the writing must be that of Semites coming from Egypt, and such people before the xviiiith dynasty must be the Hyksos. Such are the main points of the case for the Hyksos origin of the writing.

On this M. Jean sums up, (1) that the alphabet was used in Phoenicia in the xiiiith century. (2) That there are Egyptian influences in it. (3) That it

would be difficult to admit that it was born in Canaan in the xvth or xivth centuries, because the cuneiform letters of that age have Canaanite glosses using initial vowels, while the Phoenician alphabet has no vowels. (4) The forms of the earliest signs at Byblos in the xiiith century are not original, but show a stage of evolution of the alphabet, and this stage would have been while Syria was under Babylonian influence; whereas the alphabet was started in a region free of Babylonian writing, and passed thence into Canaan. (5) It is not known that the Hyksos ever were in Sinai. (6) Butin attributes the Serabit script to Semites working with Egyptians in Sinai. But could they read? and is it likely that they would have the mind to start such invention? (7) Do the Serabit signs represent an intermediate stage between Egyptian and Phoenician? But the values of the signs like Egyptian (eye and cross) are different values in the supposed rendering of the Serabitic.

A comparative table is given of the signs in eight alphabets. [Only ten of the signs are connected with signs in Egypt, and four of those are never used in ordinary hieroglyphs, and could not be transferred from a current knowledge of Egyptian. There is therefore a very slender connection with Egypt.]

M. Jean concludes, (1) there are more signs at Serabit than in Semitic. (2) Some signs are like archaic Phoenician. (3) Only one group of signs is often reproduced. (4) In reading this group of signs according to the values of the Phoenician which they resemble, or of which the traditional names signify the object figured, one can obtain P'ALT which with the change to B may be Ba'alat or Hathor. (5) Among the other signs there are some which resemble Egyptian, but one cannot be certain of their values. (6) It seems that these signs derive from consonant hieroglyphs in Egyptian. (7) But if these values are adopted, the readings are at least doubtful. (8) The supposed translations of such texts are very discrepant. One can only say that the Egyptian writing has perhaps sometimes inspired the Serabitic. Praetorius has suggested that the Phoenician writing was not descended from the script of Mesha, or a little earlier, but from a much older script which was essentially alphabetic. To this Jean agrees, but it does not seem that one can define it further. The hypothesis that it was derived from Egyptian through Serabitic does not seem sufficiently established: thus one may still doubt the existence of an alphabet at Serabit.

After more than twenty years it does not seem therefore, from this article of M. Jean, that we can say more than the conclusions stated at the first discovery of the Serabit writing:—"I am disposed to see in this, one of the many alphabets which were in use in the Mediterranean lands long before the fixed alphabet selected by the Phoenicians. A mass of signs was used continuously from 6000 or 7000 B.C. until out of it were crystallized the alphabets of the Mediterranean,—the Karians and the Celtiberians preserving the greatest number of signs, the Semites and Phoenicians keeping fewer. The two systems of writing, pictorial and linear, which Dr. Evans has found to have been used in Crete, long before the Phoenician age, show how several systems were in use. Some of the workmen employed by the Egyptians, probably the Aamu or Retennu,—Syrians,—who are often named, had this system of linear signs which we have found; they naturally mixed many hieroglyphs with it, borrowed from their masters." (PETRIE, *Researches in Sinai*, 131.) Certainly as far back as the xiith dynasty, names were written in such signs (*Kahun*, xxvii, 85;

Buttons and Design Scarabs, vi, 72 B), and the system of the same signs extends unbroken from the prehistoric ages. Serabitic writing is a late and degraded jumble of signs that had long been used in cursive writing, mixed with others borrowed from rectilinear sculpturing.

DUNAND, M.—*Les Égyptiens à Beyrouth*. M. Moret described to the Academy a sphinx with the name of Amenemhat IV, and a gold pectoral of the same king, stated to have been found in Syria. M. Dunand has identified the sphinx as that recently bought for the British Museum; but he does not seem to notice that the head has been cut back a good deal in transforming it from the Leonine bushy hair and ears into the human type; it was originally probably exactly of the type of the Tanis sphinxes. By enquiries at Beyrut, he believes that it can be identified with a sphinx which was found in course of excavation for a municipal building in the middle of Beyrut, at the market place. The pectoral of Amenemhat has, it is said, been stolen from Byblos since the last excavations. It is agreed, in a discussion at the Academy, that a gold statuette and various gold ornaments have been sold from Byblos, and the large amount of objects which collectors have obtained, during the excavations, leaves no doubt about leakage.

ABEL et BARROIS.—*Fouilles ... à Neirab*. This begins with an apology for the lack of definite tomb groups, for "when one reaches the tomb itself, whatever the precautions, it is often difficult to attempt a certain attribution." The contents of this cemetery appear therefore as a mass of objects of various dates without any discrimination. There is a long jar of about 850 B.C. Greek pottery of 500 to 300, a piece of a Roman moulded figure, arrow heads of 600 B.C. or earlier, and two duck weights which are probably the earliest things. As there is no connection stated between any of the objects, such excavation might as well have been left to a dealer.

In a review, M. Dussaud stoutly defends the date of the tomb of Ahiiram, not only on the ground of the vases of Ramessu II, but because they are only contributory to the main evidence of the fine Mykenaeen pottery and the ivory from the same tomb. The age of the Phoenician inscription is assured.

In a review of M. Picard's *Geology of the Kishon valley*, his conclusion is that the Chellean and Mousterian are represented, but there is no Solutrean and the Magdalenian is doubtful. This suggests that the Solutreans did not break in there, but the Mousterian was left to wear down into the Magdalenian.

The question of the altars of the Old Testament comes up, and Max Lohr, as well as his reviewer Dussaud, hold that archaeologically the early date of the incense altar is certain, so literary criticism must again climb down.

The Jewish Quarterly Review, April 1929.

SPEISER, E. A.—*Some prehistoric antiquities from Mesopotamia*. This record results from a mound Tepe Gawra, northeast of Mosul. A complete record was obtained of every period from about 4000 to 2500 B.C. The stages may be named as "Pottery painters," "Shrine Builders," and "Early Bronze people." The first stage is regarded as identical with the Early Elamite; the people of the second stage came from the south, probably Early Semites of Babylonia before the Sumerians; the third stage is Sumerian-Accadian culture of the time

of Sargon I. "The older the pottery, the finer the ware and the more original the decoration. The very lowest stratum furnished what were by far the most beautiful fragments." A mere fortnight of work has produced valuable results, and these we need to correlate with innumerable other sites which await a digger. Are we always to neglect our opportunities?

Art and Archaeology, May 1929. This gives a curious figure of a bronze mirror of Egyptian form, which has on it incised Greek lettering, found to be copied from a passage on the Rosetta stone. It is copied from that identical version of the decree, because two differing forms of A are similarly used in the parallel words. As the inscription is reversed, it is suggested that it was made from a blackened copy of the stone which was circulated soon after it was found. But as the letters are incised in the bronze, it is probably a *cire perdue* casting, and was modelled in relief, which accounts for the reversal of the direction.

Palestine Exploration Fund, April 1929. This contains a further report by Mr. Rowe on excavation at Beth-shan. The temple of Tehutmes III has been fully cleared, and the south wall of the fort of this age. The views of the temple of the god Mekal raise the question of the restoration of the walls. Some, in parts of the scene, are like those found in ruins, rounded and damaged. But the show parts of the temple are all squared up, apparently by a liberal use of fresh plaster. We have been accustomed to a good deal of restoration in Crete, but the reworking of walls to sharp edges, flat sides, and a uniform top is a process full of danger to archaeology. If copied by unscrupulous hands, it would destroy all value in the discoveries, and such treatment is better avoided, however it may improve the look of a site. The most striking object found was a panel of basalt, with a combat of a lion and a dog rampant, at the top, and below that a lion attacked by a dog springing on its haunch which it bites. The work is hammer dressing with some engraved lines of detail, intermediate between the quality of Hittite and Assyrian work. Among small objects is a Syro-Hittite cylinder stated to be of the age of Tehutmes III. The figures of two goats crossing and three stars, is almost exactly that of a cylinder found at Beth-pelet in a grave with two scarabs which can hardly be before the sixteenth dynasty. Two scarabs of Tehutmes III are coarse copies made in Palestine.

Sitzungsberichte der Bayerischen Akademie, 1928, 8.

BISSING, F. W. VON.—*Tine*. This site is a little north of Minieh on the east bank, marked as Tinah. It has a fort of Men-kheper-ra of the xxist dynasty, similar to El Hibeh and other forts on the eastern bank to guard the Nile approach to Thebes. There are high walls and some alabaster columns, and lines of houses of a town, with pottery of late Greek age; there is also late Roman building and pottery.

Archiv für Orientforschung. Band V. Heft 2/3, 1929. VON BISSING, F. *Probleme der ägyptischen Vorgeschichte*.

The whole of this long paper can be summed up in the quotation with which Dr. von Bissing concludes, "Every new object of any importance from these early times merely serves to convince us, if we are wise, of the extent of our ignorance." Dr. von Bissing has attempted to gather together all the

evidence, for and against, as to early intercourse between Egypt and Mesopotamia. He denies that there was any foreign influence in prehistoric times in the Nile Valley, although in discussing the pear-shaped mace-heads he acknowledges that similar weapons are found in Mesopotamia, occasionally decorated in relief like the great limestone mace-heads of Hierakonpolis (these, by a curious slip, he calls ivory). He takes each point in succession—pottery-stands, cylinder seals, forms of boats, brick-building, the *motif* of the man between two lions on the Gebel Araq knife-handle, the snake-necked leopards, and so on,—but in none of these does he see reason to believe that there was any real connection between Egypt and the contemporary civilisations. The Nile Valley produced an entirely independent civilisation which was not beholden to any other country for any of its inventions or artistic *motifs*. This is Dr. von Bissing's point of view, and he brings forward arguments in favour of it.

M. A. MURRAY.

Metropolitan Museum, New York. Egyptian Expedition 1927-28. This report describes the work of clearing out the ancient quarry in which the fragments of the statues of Hatshepsut had been buried, after their destruction by Tehutmes III. Some most fruitful work in Egypt now consists in undoing the destructions of the past. At Karnak the beautiful work of Amenhetep I, the granite shrine of Hatshepsut, and the buildings of Akhenaten are now being reconstituted. So also at Deir el Bahri, all the wealth of statuary which filled the temple is now gradually being brought to light and restored. What enormously increased the labour of this clearance was that the whole of the material of seven years' clearing of the Deir el Bahri temple by Naville had been shot into the hollow upon the sculptures. Thus 100,000 tons of rubbish had to be shifted, which was not there a generation ago. It was the same dumping which buried the tomb of the architect Sen-mut, found and described by Mr. Winlock (*ANC. EG.* 1928, 59). In a much more recent excavation in Egypt, the material has all been dumped on the top of a cemetery, and will some day have to be moved again. This mode of selfish working has lumbered Qurneh and Saqqara cemeteries so that it is most difficult to make proper research. Unhappily this labour of years of clearance and restoration of fragments cannot promise us more history, and it is sad to see Mr. Winlock's judgment and abilities used up in providing decoration for museums.

An account is given of the paintings in the oasis of Khargeh, of late Roman period, and based on classical work like that in early manuscripts. Emblematic figures of Peace, Justice, and Prayer are mixed with figures of patriarchs, a stage of art much better than that of catacomb paintings. An astonishing front view of a peacock fills the width of a pendentive. From coins found there, this work is of about the middle of the ivth century.

In the copying of tomb paintings, Mr. Davies states that his work on the great tomb of Rekh-ma-ra is "as good as finished." He discourses on the figures of the captive women coming up to produce their children to be recorded, rather like the register of Trimalchio. The great work of preserving the tomb paintings in accurate copies is happily progressing.

NOTES AND NEWS.

THE BRITISH SCHOOL OF EGYPTIAN ARCHAEOLOGY.

The Annual Exhibition held this summer has been the most successful since the War. The Hyksos and Philistine series of discoveries greatly interested the public, and this interest in historical research was increased by the new solution of long-standing difficulties in the Egyptian history. The scholars who went into the matter were well content to accept the settlement of the chronology proposed in this number, and the consequent fixing of the dates in prehistoric Europe.

Although Palestine has abandoned its reputation for tranquillity, there is no reason to anticipate any hindrance in continuing our happy relations with the settled Arabs in the south, who have proved so amenable and honest in our work. In the coming winter, therefore, it is hoped to gain further results from the Hyksos remains at Beth-pelet, to clear a large building of the period of Solomon, and to work out the important prehistoric sites. When such a valuable region is clearly in hand, we ought to reap the results fully and without delay. But all the work must depend on public support at home. Our reserves have been freely used as far as is prudent, and unless there is more support forthwith, the work will have to be reduced to half strength, and we shall only get half results. The decisive bearing, however, of these material remains upon the vexed questions of Biblical criticism as well as on the history of Egypt, render this an urgent matter. Contributions are received at University College by Lady Petrie.

The Dramatic papyrus, of which the publication is reviewed in this number, has been presented to the British Museum by the British School which discovered it and Dr. Alan Gardiner who prepared it for publication.

THE BRITISH SCHOOL OF JERUSALEM.

Miss Garrod has been excavating in the great cave at Athlit near Haifa, on behalf of the British School in Jerusalem. She has reached down to the Mousterian level; above that were three strata of late Palaeolithic age, then the Mesolithic in which was a burial of ten youths with a carving of a head; above this was the Bronze Age deposit. Thus for the later part of the Stone Age this gives a clear sequence of types.

Mr. Brunton's discovery of a pre-Badarian culture in the Nile valley is the amplification of Miss Caton-Thompson's ruder Fayum remains. The flint work is closely like that of the earliest but one of the Neolithic sites in South Palestine found this year by our School. The most important matter is that it proves to be the source of the incised black beakers, which were known sporadically before. These look like much higher productions than the rest of the connections, and suggest import or immigration from a more advanced source. Meanwhile this age is now called the Tasian, and is followed by the Badarian, Amratian, Gerzean, and Semainian prehistoric, all before the 1st dynasty.

At Zimbabwe Miss Caton-Thompson has excavated down to a fine floor of granite ten feet under the surface, and found various remains on the way. Her conclusion is that the work is due to a native tribe.

Early customs remain in Lake Menzaleh, that desolate corner of the Delta. In the midst of it is Matarieh, and on the Prime Minister's visit there, bullocks were sacrificed in order that he should step over the blood as a lucky omen. His purpose in going there was to lay the foundation stones of village hospitals, much needed where such sacrifices are thought beneficial.